

On October 18, while in Refrigerator Canyon en route to Angels Landing, I obtained the first record of the Western Goshawk *Astur atricapillus striatulus* for the park. The hawk was in rapid pursuit of a small bird which managed to escape in a dense grove of evergreens. No effort was made to flush the bird from the trees, the hawk apparently knowing that such a task would be fruitless.

As additional studies are made, especially seasonal studies in the higher reaches of the park, new and valuable data should be uncovered that will go far toward clarifying the status of many species in this area that is now obscure.—Russell K. Grater, Park Naturalist, Zion National Park.

Antarctic Birds Contributed by Dr. Russell G. Frazier

A valuable collection, consisting of three species of Antarctic birds, was contributed to the collections of Brigham Young University by Dr. Russell G. Frazier of Bingham Canyon, Utah, on October 25, 1941. These birds were collected in Antarctica by Dr. Frazier while he was a member of the United States Antarctic Expedition, 1939-1941, under the command of Rear Admiral Richard E. Byrd. Dr. Frazier was one of the physicians of the expedition which sailed in the *North Star* and the *Bear* in late November, 1939, from Atlantic ports of the United States. These same two vessels brought the members of the expedition back to Boston in May, 1941. Of the 36 species of birds found in the Antarctic region, three are now represented in the Brigham Young University zoological collection. Two of the five species of Penguins, the *Adelie* and *Emperor*, and a pair of Snow Petrel, with an egg clutch which consists of one egg, makes up the collection.

THE ADELIE PENGUIN

The Adelie Penguin, *Pygoscelis adeliae* Hombron and Jacquinet, Ann. Sci. Nat. (2), p. 320 (1841, Adélie Land), is the common bird throughout the circumference of the extensive polar continent. This species never leaves Antarctica to go north of 60° south latitude. During the short summer the Adelie is busy hatching and rearing its young, while during the long winter it lives on the open sea. It begins to establish its breeding territories in October and November by selecting areas left bare by the melting snow. These breeding colonies are to be found everywhere in Antarctica from the beginning of the mating and nesting period until winter begins in March. There is evidence that the birds return year after year to the same rookeries and use the same nests. The mating pair stays together for the breeding period. Two, very rarely three, eggs are laid which are set on alternately by the male and female. Incubation lasts from about 33 to 36 days; all hatching being over by the middle of January. The down-covered young are fed fish and Crustacea by the parent birds. They regurgitate the food, which is taken from their throats by the awkward, fast-growing young birds. When the young, in March, take to the sea, to care for themselves, they have a plumage different in color to that of the parents, this they wear for a year, when by molting they get the feather coat of the breeding adults.

THE EMPEROR PENGUIN

The Emperor Penguin, *Aptenodytes forsteri* Gray, Ann. Mag. Nat. Hist. XIII, p. 315 (1844, S. lat., 64° 77' S.), is widely distributed over the whole of the Antarctic continent as is the Adelle Penguin. This beautiful bird is large in size, oftentimes reaching the height of 38 to 40 inches and weighing 60 to 70 pounds. Its head is black, except that on each side there is a band of yellow that diminishes in color down along the neck. The back is bluish-gray, while the belly is a satiny white. The Emperor does not leave the polar regions, staying near the continental mass on the large icebergs. The habits of this Penguin are very different from those of the Adelle Penguin briefly discussed above. The laying of the eggs takes place in midwinter, at about the end of June, when the polar night reaches a temperature of 40 to 50 degrees centigrade below zero. The mating pairs gather on the great ice masses, lay a single egg which is kept off the ice by being placed on the feet of the Penguin and held snugly against the body of the bird. Since the incubation period lasts about two months, the egg is shifted from the female to the male during this period. Dr. Frazier has the following to say about this species:

"The Emperor Penguin nests in rookeries around Mt. Erebus where they can secure stones for egg 'companions,' laying their egg during the mid-winter night. They carry it on the top of their foot where they can hold it against a fold of skin and their lower abdomen. The matings are seasonal."

The young are hatched about the beginning of September, and towards the last of October migration towards the north begins. Groups of adult birds, with some young ones still covered with down, are carried off on small blocks of ice broken from the icebergs. The young birds lose their down in January and from that time on they shift for themselves. The adults molt before returning in June to the continental ice for breeding.

THE SNOW PETREL

The Snow Petrel, *Pagodroma nivea* (Gm.), Syst. Nat. 1., p. 562 (1788), differs greatly from the Penguins in color and habits. This species is spotless and white with large jet black eyes, black beak, and black webbed feet. They vary in size and wing length; the male having a range from 10 to 11.8 inches, and the female from 9.8 to 11.8 inches in wing length. Their food consists of small sea organisms which they capture when skimming over the water, in the cracks and channels in the ice.

The Snow Petrel protects itself, as do most Petrels, by expectorating a fluid, which has a fishy odor, towards the intruder, the smell of which will cling to clothing for many days. This is perhaps the most striking bird of the Antarctic region. Dr. Frazier reports as follows concerning his experience with it:

"The Snow Petrel—inhabit the Antarctic, and to the best of my meager knowledge stay within the Antarctic circle. They nest in November and December; lay one egg. The only rookery found was on Mt. Breckan-ridge—155° W. 77° South. The nests were found under loose laying rocks on the north exposed side of the mountain. The nests are on bare rocks, no feathers or protection from the ground. The nests are used year after year. This was determined by the ejecta on the rocks which the birds can eject from their mouths with unerring accuracy at an

enemy for a distance of four feet. By January 10th the chicks should be hatched. The egg is protected by the bird, even at the cost of her life. Their enemy is the *Skua Gull* that nests close by. The bird lives on sea life and flies great distances for its food. The rookery I found had about 100 nests."

Mr. Howard Saunders in his *Antarctic Manual*, p. 228 (1901), comments as follows on the range of the Snow Petrel:

"This bird has been obtained as far north as Falkland Islands, but it does not occur in any numbers until Lat. 60° S. is passed, whence it can be traced as far southward as man has penetrated. Every expedition has noticed it. Ross found it among the crevices of the cliffs at Cockburn Island; Surgeon Webster, of H. M. S. '*Chanticleer*,' met with the bird from January to March on Deception Island, South Shetland; and the German Expedition found it nesting at the end of December on South Georgia. From the Enderby Quadrant it has not yet been recorded."¹

The Snow Petrel's habits were studied by Dr. Racovitza during the voyage of the '*Belgica*.' The following interesting extract is from his report:

"But it is better not to make too intimate an acquaintance with these lily-white beings, for then one is saved from cruel disillusion. Its voice is shrill and disagreeable, and its ways are deplorably low caste. It possesses the faculty of being sea-sick at will; and when one attempts to seize it, it discharges full in one's face the oily contents of its chest. I can affirm, from personal experience, that one does not come off with the perfume of the rose. One must add, however, to do strict justice, that it merits extenuating circumstances; for this unpleasant habit of this bird serves as a protection for its feeble person, and that is a reason of a certain value."²

This collection of Antarctic birds is being arranged in a habitat case just opposite a habitat group of Polar Bears. The Polar Bears are a gift from the Museum of The Academy of Natural Sciences of Philadelphia, received from Mr. Wharton Huber in 1936. The large male bear of the group was taken in North Greenland by the Perry Relief Expedition. The painted backgrounds showing the general environmental conditions along with the specimens makes valuable study groups.—V. M. T.

(1) Report on the Collections of Natural History Made in the Antarctic Regions during the voyage of the "Southern Cross," p. 149, 1902. British Museums of Natural History.

(2) *op. cit.* p. 153.